WHAT IS CLAIMED IS:

1   1.   A data network for communicating data between a sender unit and a
2 receiver unit, comprising:
3   a core network including relay elements intercoupled by data links;
4   a gateway element coupled to the core network and to the sender unit, the
5 receiver unit being coupled to the core network, the gateway element having at least one
6 information table identifying at least one route from the gateway element through the core
7 network to the receiver unit, including the status of the route.

1   2.   A method of management of data communication through a core
2 network between a sender unit and a receiver unit that includes the steps of:
3   defining at least one communicative route through the core network between
4 the sender and receiver units that includes a plurality of network links that each have a
5 predetermined communication resource;
6   coupling the sender and receiver units to the core network with a sending and
7 receiving gateway element, respectively;
8   allocating to the sending gateway element a first portion of the predetermined
9 communication resource of at least certain of the network links forming a communicative
10 route between the sending and receiving gateway elements, and maintaining at the sending
11 gateway element information indicative of the allocated predetermined communication
12 resource;
13   receiving at the sending gateway element a request from the sender unit for a
14 data transfer across the route, the request including a specification of requested
15 communication resource;
16   the sending gateway checking the information to grant the request if the
17 communicating capacity of the communicative route is available.

1   3.   The method of claim 2, including allocating a second portion of the
2 predetermined communication resource of the certain of the network links.

1   4.   The method of claim 3, wherein the step of checking the information
2 includes reconfiguring the predetermined communicative resource of the certain of the
3 network links re-allocate at least a portion of the communicative resource allocated to the
4 receiving gateway element to the sending gateway element.

1   5.   The method of claim 2, wherein the predetermined communication

2 resource is a communication bandwith.

1   6.   The method of claim 2, wherein the predetermined communication

2 resource includes a communication bandwith.

1   7.   A method of admission control of data to a core network having a

2 number of relay nodes interconnected by data links, each of the data communicating links

3 having a predetermined data communication capacity, the method including the steps of:

4   communicatively coupling sending and receiving gateway elements to the core

5 network;

6   connecting first and second data transfer elements to the sending and receiving

7 gateway elements, respecting, for data communication by a route through the core network

8 containing certain of the data links;

9   assigning first and second portions of the data communication capacity of at

10 least the certain of the data links to the sending and receiving gateway elements, respectively;

11   providing the sending gateway element with information indicative of the first

12 portion;

13   the sending gateway element responding to a request for data communication

14 of a requested capacity from the first data transfer element by checking the information, and

15 granting the request if the communication capacity of the certain data links is at least equal to

16 or greater than the requested capacity.

1   8.   The method of claim 7, wherein the sending step includes re-assigning

2 at least a part of the second portion to the first portion of the data communication capacity of

3 at least one of the certain data links.

1   9.   The method of claim 8, including the step of providing the receiving

2 gateway element with information indicative of the second portion.

1   10.   The method of claim 9, wherein the step of re-assigning includes

2 decreasing the information indicative of the second portion by the part of the second portion

3 re-assigned to the first portion.

1   11.   The method of claim 10, wherein the step of re-assigning includes

2 increasing the information indicative of the first portion by the part of the second portion re-

3 assigned to the first portion.

1   12.   A system for providing a QoS communication route from a first

2 communicting entity to a second communicating entity through a core network that includes

3 a plurality of network links, each network link having a predetermined communication

4 resource, the system including;

5   a sending gateway element and a receiving gateway element respectively

6 coupling the first and second communicating entities to the core network;

7   the sending gateway element a first portion of the predetermined

8 communication resource of at least certain of the network links forming a communicative

9 route between the sending and receiving gateway elements, and maintaining at the sending

10 gateway element information indicative of the allocated predetermined communication

11 resource;

12   receiving at the sending gateway element a request from the sender unit for a

13 data transfer across the route, the request including a specification of requested

14 communication resource;

15   the sending gateway checking the information to grant the request if the

16 communicating capacity of the communicative route is available.